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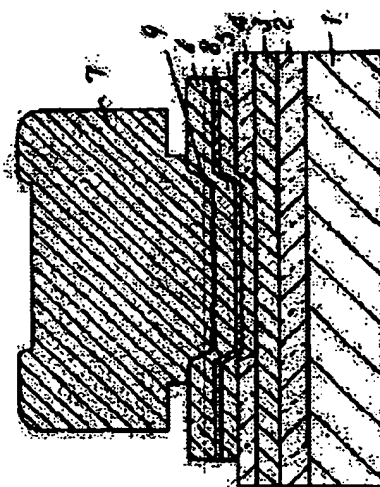
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## (54) SEMICONDUCTOR DEVICE AND ELECTRODE FORMATION THEREOF

## (57)Abstract:

**PURPOSE:** To largely improve the bonding intensity of a gold bump electrode by sequentially stacking layers of chromium, chromium-copper alloy and copper on a metal layer, providing the rugged region to the surface of copper layer by the etching and bonding a gold bump electrode body to such surface.

**CONSTITUTION:** A chromium-copper alloy layer 8 is formed in the thickness of about 200W4,000&angst; by simultaneously vacuum depositing chromium and copper on the upper layer of chromium layer 5. Then, a copper layer 6 is formed by vacuum deposition in the thickness of about 1μm thereon. Next, the surface of this copper layer 6 is etched by the dipping process for 2W3sec under the room temperature using a ferric chloride solution, for example, a solution having the composition, H2O/(FeCl3:35wt%+H2O=35/1. Thereby the surface 9 is roughly finished. Finally, a thick gold bump layer 7 is formed by gold plate forming method.



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